RF EXPOSURE EVALUATION METHOD

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation
Distances are illustrated in the following Table.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

Note: 10-g Extremity SAR Test Exclusion Power Thresholds are 2.5 times higher than the 1-g SAR Test Exclusion Thresholds indicated above. These thresholds do not apply, by extrapolation or other means, to occupational exposure limits.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,where
f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation
The result is rounded to one decimal place for comparison
The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

BLE

Mode	2402-2480MHz
Detector	PEAK
2402MHz	3.5±1dBm
2440MHz	2.5±1dBm
2480MHz	2.5±1dBm

For 10-g SAR test exclusion thresholds

frequency (GHz)	Maximum Peak Conducted Output Power (dBm)	Tune up Power (dBm)	Tune up Power (mW)	Result	Limit
2.402	4.1	4.5	2.818382931	0.8736	7.5
2.44	3.31	3.5	2.238721139	0.6994	7.5
2.48	3.12	3.5	2.238721139	0.7051	7.5

For 1-g SAR test exclusion thresholds

frequency (GHz)	Maximum Peak Conducted Output Power (dBm)	Tune up Power (dBm)	Tune up Power (mW)	Result	Limit
2.402	4.1	4.5	2.81838293	0.0971	3
2.44	3.31	3.5	2.23872114	0.0777	3
2.48	3.12	3.5	2.23872114	0.0783	3

2.4G WIFI

Mode	802.11b/g/n (20MHz): 2412~2462 MHz 802.11n (40MHz):2422~2452MHz
Detector	PEAK
802.11b	12.5±1dBm
802.11g	8.5±1dBm
802.11n20	8.5±1dBm
802.11n40	8±1dBm

For 10-g SAR test exclusion thresholds

Mode	frequency (GHz)	Maximum Peak Conducted Output Power (dBm)	Tune up Power (dBm)	Tune up Power (mW)	Result	Limit
802.11b	2.412	13.39	13.5	22.38721139	6.9537	7.5
802.11g	2.412	9.15	9.5	8.912509381	2.7683	7.5
802.11n20	2.412	9.31	9.5	8.912509381	2.7683	7.5
802.11n40	2.422	8.21	9	7.943282347	2.4724	7.5

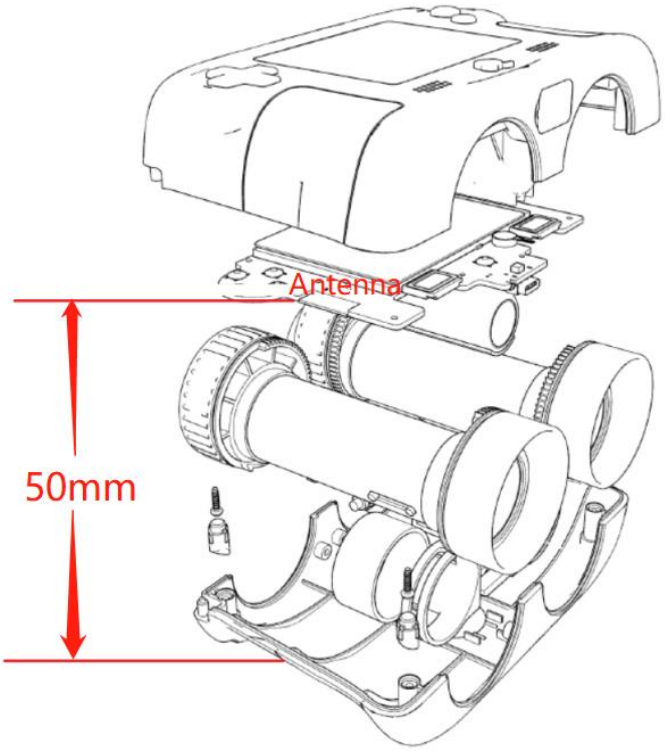
For 1-g SAR test exclusion thresholds

Mode	frequency (GHz)	Maximum Peak Conducted Output Power (dBm)	Tune up Power (dBm)	Tune up Power (mW)	Result	Limit
802.11b	2.412	13.39	13.5	22.38721139	0.6954	3
802.11g	2.412	9.15	9.5	8.912509381	0.2768	3
802.11n20	2.412	9.31	9.5	8.912509381	0.2768	3
802.11n40	2.422	8.21	9	7.943282347	0.2747	3

Remark: The worst case gain of the antenna is 3.76dBi.

2.4G WiFi& BLE can not Synchronous transmission; only the worst case recorded.

Threshold at which no SAR required is 0.6954≤ 3.0 for 1-g SAR , Separation distance is 50mm and 6.9537≤ 7.5 for 10-g SAR, Separation distance is 5mm.


Antenna
50mm